

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.(currently amended) A barbed suture for connecting human or animal tissue, said suture comprising (a) an elongated body having a first end and a second end and (b) a plurality of barbs projecting from the body, each barb facing in a direction and being adapted for resisting movement of the suture, when in tissue, in an opposite direction from the direction in which the barb faces, the barbs having a multiple spiral disposition on the body ~~selected from the group consisting of a multiple spiral disposition, an overlapping disposition, a irregular disposition, and combinations thereof~~, wherein the multiple spiral disposition includes barbs spaced longitudinally along the body such that a plane perpendicular to the longitudinal axis of the suture and cutting transversely through the suture and intersecting a barb will not intersect any other barb ,~~the overlapping disposition is such that for at least two adjacent barbs, one being an overlapping barb and one being an overlapped barb, the overlapping barb has an underside and the overlapped barb has a topside where part of the underside of the overlapping barb is derived from part of the topside of the overlapped barb, and wherein the irregular disposition is such that the relative radial and longitudinal spacing of the barbs along the body of the suture is irregular, and the barbs face in random directions including at least one barb wherein the longitudinal axis of the at least one barb is not parallel to the longitudinal axis of the body of the suture.~~

Claim 2. (currently amended) A barbed suture for connecting human or animal tissue, said suture comprising (a) an elongated body having a first end and a second end and (b) a plurality of barbs projecting from the body, each barb facing in a direction and being adapted for resisting movement of the suture, when in tissue, in an opposite direction from the direction in which the barb faces, the barbs having a multiple spiral disposition on the body ~~selected from the group consisting of a multiple spiral disposition, an overlapping disposition, a irregular disposition, and combinations thereof~~, and the barbs are all facing in a direction toward only one of the first end and the second end, wherein the multiple spiral disposition includes barbs spaced longitudinally along the body such that a plane perpendicular to the longitudinal axis of the suture and cutting transversely through the suture and intersecting a barb will not intersect any other barb ,~~wherein the overlapping disposition is such that for at least two adjacent barbs, one being an overlapping barb and one being an overlapped barb, the overlapping barb has an underside and the overlapped barb has a topside where part of the underside of the overlapping barb is derived from part of the topside of the overlapped barb, and wherein the irregular disposition is such that the relative radial and longitudinal spacing of the barbs along the body of the suture is irregular, and the barbs face in random directions including at least one barb wherein the longitudinal axis of the at least one barb is not parallel to the longitudinal axis of the body of the suture.~~

Claim 3. (currently amended) A barbed suture for connecting human or animal tissue, said suture comprising (a) an elongated body having a first end and a second end and (b) a plurality of barbs projecting from the body, each barb facing in a direction and being adapted for resisting movement of the suture, when in tissue, in an opposite direction from the direction in which the barb faces, the barbs having a multiple spiral disposition on the body ~~selected from the group consisting of a multiple spiral disposition, an overlapping disposition, a irregular disposition, and combinations thereof~~, and the barbed suture has at least a first barbed portion and a second barbed portion, wherein the barbs of the first portion are facing in a direction toward only the first end and the barbs of the second portion are facing in a direction toward only the second end, wherein the multiple spiral disposition includes barbs spaced longitudinally along the body such that a plane perpendicular to the longitudinal axis of the suture and cutting transversely through the suture and intersecting a barb will not intersect any other barb ~~; wherein the overlapping disposition is such that for at least two adjacent barbs, one being an overlapping barb and one being an overlapped barb, the overlapping barb has an underside and the overlapped barb has a topside where part of the underside of the overlapping barb is derived from part of the topside of the overlapped barb, and wherein the irregular disposition is such that the relative radial and longitudinal spacing of the barbs along the body of the suture is irregular, and the barbs face in random directions including at least one barb wherein the longitudinal axis of the at least one barb is not parallel to the longitudinal axis of the body of the suture.~~

Claims 4 and 5. (canceled)

Claim 6. (currently amended) A barbed suture for connecting human or animal tissue, said suture comprising (a) an elongated body having a first end and a second end and (b) a plurality of barbs projecting from the body, each barb facing in a direction and being adapted for resisting movement of the suture, when in tissue, in an opposite direction from the direction in which the barb faces, wherein the barbs are in a ~~twist-out~~ multiple spiral disposition and the barbed suture is made from a suture filament having a portion that is twisted from about 2 to about 17 times per inch when the barbs are escarped into the suture filament to make the barbed suture.

Claim 7. (currently amended) A barbed suture for connecting human or animal tissue, said suture comprising (a) an elongated body having a first end and a second end and (b) a plurality of barbs projecting from the body, each barb facing in a direction and being adapted for resisting movement of the suture, when in tissue, in an opposite direction from the direction in which the barb faces, wherein the barbs are in a ~~twist-out~~ multiple spiral disposition and the suture has a spirality angle α ranging from about 5 degrees to about 25 degrees.

Claim 8. (original) The barbed suture according to claim 7, wherein the suture has a spirality angle α ranging from about 7 degrees to about 22 degrees.

Claim 9. (original) The barbed suture according to claim 8, the suture has a spirality angle α ranging from about 12 degrees to about 18 degrees.

Claims 10 and 11. (canceled)

Claim 12. (original) The barbed suture according to claim 1, wherein the suture is made from a material selected from the group consisting of a bio-absorbable material, a non-absorbable material, and combinations thereof.

Claim 13. (original) The barbed suture according to claim 12, wherein the bio-absorbable material is selected from the group consisting of polydioxanone, polylactide, polyglycolide, polycaprolactone, and combinations thereof.

Claim 14. (original) The barbed suture according to claim 12, wherein the non-absorbable material is selected from the group consisting of a polymer, a metal, a metal alloy, a natural fiber, and combinations thereof.

Claim 15. (original) The barbed suture according to claim 14, wherein the polymer is selected from the group consisting of polyamide, polyester, polypropylene, polyurethane, polytetrafluoroethylene, polyether-ester, and combinations thereof.

Claim 16. (currently amended) A barbed suture for connecting human or animal tissue, said suture comprising (a) an elongated body having a first end and a second end and a diameter and (b) a plurality of barbs projecting from the body, each barb facing in a direction and being adapted for resisting movement of the suture, when in tissue, in an opposite direction from the direction in which the barb faces, wherein:

(I) the barbs have a multiple spiral disposition on the body ~~selected from the group consisting of a staggered disposition, a twist cut multiple spiral disposition, an overlapping disposition, a random disposition, and combinations thereof, and~~

(II) the barbs have a configuration selected from the group consisting of a barb cut angle θ ranging from about 140 degrees to about 175 degrees, a barb cut depth with a ratio of the barb cut depth to the suture diameter ranging from about 0.05 to about 0.6, a barb cut length with a ratio of the barb cut length to the suture diameter ranging from about 0.2 to about 2, a barb cut distance with a ratio of the barb cut distance to the suture diameter ranging from about 0.1 to about 6, a corrugated barb underside, an arcuate barb base, at least two sets of barbs with each set having a barb size different from the barb size of the other set, and combinations thereof.

Claim 17. (original) The barbed suture according to claim 16, wherein the suture is made from a material selected from the group consisting of a bio-absorbable material, a non-absorbable material, and combinations thereof.

Claim 18. (original) The barbed suture according to claim 17, wherein the bio-absorbable material is selected from the group consisting of polydioxanone, polylactide, polyglycolide, polycaprolactone, and combinations thereof.

Claim 19. (original) The barbed suture according to claim 17, wherein the non-absorbable material is selected from the group consisting of a polymer, a metal, a metal alloy, a natural fiber, and combinations thereof.

Claim 20. (original) The barbed suture according to claim 19, wherein the polymer is selected from the group consisting of polyamide, polyester, polypropylene, polyurethane, polytetrafluoroethylene, polyether-ester, and combinations thereof.

Claim 21. (canceled)

Claim 22. (currently amended) A barbed suture for connecting human or animal tissue, said suture comprising (a) an elongated body having a first end, a second end and a diameter and (b) a plurality of barbs projecting from the body, each barb facing in a direction and being adapted for resisting movement of the suture, when in tissue, in an opposite direction from the direction in which the barb faces, wherein:

(I) the barbs have a disposition on the body comprising a ~~twist-cut~~ multiple spiral disposition with a spirality angle α ranging from about 5° to about 25°, and

(II) the barbs have a configuration comprising (i) a barb cut θ angle ranging from about 140° to about 175°, (ii) a barb cut depth with a ratio of the barb cut depth to the suture diameter ranging from about 0.05 to about 0.6, (iii) a barb cut length with a ratio of the barb cut length to the suture diameter ranging from about 0.02 to about 2, and (iv) a barb cut distance with a ratio of the barb cut distance to the suture diameter ranges from about 0.01 to about 6.

Claims 23 - 30. (canceled)

Claim 31. (previously presented) The barbed suture according to claim 2, wherein the suture is made from a material selected from the group consisting of a bio-absorbable material, a non-absorbable material, and combinations thereof.

Claim 32. (previously presented) The barbed suture according to claim 31, wherein the bio-absorbable material is selected from the group consisting of polydioxanone, polylactide, polyglycolide, polycaprolactone, and combinations thereof.

Claim 33. (previously presented) The barbed suture according to claim 31, wherein the non-absorbable material is selected from the group consisting of a polymer, a metal, a metal alloy, a natural fiber, and combinations thereof.

Claim 34. (previously presented) The barbed suture according to claim 33, wherein the polymer is selected from the group consisting of polyamide, polyester, polypropylene, polyurethane, polytetrafluoroethylene, polyether-ester, and combinations thereof.

Claim 35. (previously presented) The barbed suture according to claim 3, wherein the suture is made from a material selected from the group consisting of a bio-absorbable material, a non-absorbable material, and combinations thereof.

Claim 36. (previously presented) The barbed suture according to claim 35, wherein the bio-absorbable material is selected from the group consisting of polydioxanone, polylactide, polyglycolide, polycaprolactone, and combinations thereof.

Claim 37. (previously presented) The barbed suture according to claim 35, wherein the non-absorbable material is selected from the group consisting of a polymer, a metal, a metal alloy, a natural fiber, and combinations thereof.

Claim 38. (previously presented) The barbed suture according to claim 37, wherein the polymer is selected from the group consisting of polyamide, polyester, polypropylene, polyurethane, polytetrafluoroethylene, polyether-ester, and combinations thereof.

Claims 39-50. (canceled)

Claim 51. (previously presented) The barbed suture according to claim 6, wherein the suture is made from a material selected from the group consisting of a bio-absorbable material, a non-absorbable material, and combinations thereof.

Claim 52. (previously presented) The barbed suture according to claim 51, wherein the bio-absorbable material is selected from the group consisting of polydioxanone, polylactide, polyglycolide, polycaprolactone, and combinations thereof.

Claim 53. (previously presented) The barbed suture according to claim 51, wherein the non-absorbable material is selected from the group consisting of a polymer, a metal, a metal alloy, a natural fiber, and combinations thereof.

Claim 54. (previously presented) The barbed suture according to claim 53, wherein the polymer is selected from the group consisting of polyamide, polyester, polypropylene, polyurethane, polytetrafluoroethylene, polyether-ester, and combinations thereof.

Claim 55. (previously presented) The barbed suture according to claim 6, wherein the barbs are all facing in a direction toward only one of the first end and the second end.

Claim 56. (previously presented) The barbed suture according to claim 6, wherein the barbed suture has at least a first barbed portion and a second barbed portion, and wherein the barbs of the first portion are facing in a direction toward only the first end and the barbs of the second portion are facing in a direction toward only the second end.

Claim 57. (previously presented) The barbed suture according to claim 7, wherein the suture is

made from a material selected from the group consisting of a bio-absorbable material, a non-absorbable material, and combinations thereof.

Claim 58. (previously presented) The barbed suture according to claim 57, wherein the bio-absorbable material is selected from the group consisting of polydioxanone, polylactide, polyglycolide, polycaprolactone, and combinations thereof.

Claim 59. (previously presented) The barbed suture according to claim 57, wherein the non-absorbable material is selected from the group consisting of a polymer, a metal, a metal alloy, a natural fiber, and combinations thereof.

Claim 60. (previously presented) The barbed suture according to claim 59, wherein the polymer is selected from the group consisting of polyamide, polyester, polypropylene, polyurethane, polytetrafluoroethylene, polyether-ester, and combinations thereof.

Claim 61. (previously presented) The barbed suture according to claim 7, wherein the barbs are all facing in a direction toward only one of the first end and the second end.

Claim 62. (previously presented) The barbed suture according to claim 7, wherein the barbed suture has at least a first barbed portion and a second barbed portion, and wherein the barbs of the first portion are facing in a direction toward only the first end and the barbs of the second portion are facing in a direction toward only the second end.

Claims 63 - 68. (canceled)

Claim 69. (previously presented) The barbed suture according to claim 16, wherein the barbs are all facing in a direction toward only one of the first end and the second end.

Claim 70. (previously presented) The barbed suture according to claim 16, wherein the barbed suture has at least a first barbed portion and a second barbed portion, and wherein the barbs of the first portion are facing in a direction toward only the first end and the barbs of the second portion are facing in a direction toward only the second end.

Claim 71 - 76. (canceled)

Claim 77. (previously presented) The barbed suture according to claim 22, wherein the suture is made from a material selected from the group consisting of a bio-absorbable material, a non-absorbable material, and combinations thereof.

Claim 78. (previously presented) The barbed suture according to claim 77, wherein the bio-absorbable material is selected from the group consisting of polydioxanone, polylactide, polyglycolide, polycaprolactone, and combinations thereof.

Claim 79. (previously presented) The barbed suture according to claim 77, wherein the non-

absorbable material is selected from the group consisting of a polymer, a metal, a metal alloy, a natural fiber, and combinations thereof.

Claim 80. (previously presented) The barbed suture according to claim 79, wherein the polymer is selected from the group consisting of polyamide, polyester, polypropylene, polyurethane, polytetrafluoroethylene, polyether-ester, and combinations thereof.

Claim 81. (previously presented) The barbed suture according to claim 22, wherein the barbs are all facing in a direction toward only one of the first end and the second end.

Claim 82. (previously presented) The barbed suture according to claim 22, wherein the barbed suture has at least a first barbed portion and a second barbed portion, and wherein the barbs of the first portion are facing in a direction toward only the first end and the barbs of the second portion are facing in a direction toward only the second end.

Claims 83 - 98. (canceled)